

REMARKS

This paper is responsive to the Final Office Action dated April 17, 2008. All rejections of the Examiner are respectfully traversed. Reconsideration is respectfully requested.

At paragraphs 1 and 2 of the Office Action, the Examiner rejected claims 1-25 for obviousness under 35 U.S.C. 103, based on the combination of published United States patent applications US 2002/133554 of Nykanen et al. ("Nykanen") and US 2002/0114281 of Rosu et al. ("Rosu"), together with newly cited published United States patent application 2004/0179481 of Graupner ("Graupner"). Applicant respectfully traverses these rejections.

As noted in the previous response, Nykanen discloses a system for facilitating Web service component access. The One Logical View to Broker (OLVB) Application Program Interface (API) of Nykanen reduces the complexity of an application interface and increases the portability of the application. Network Service Broker related parameters (204, 304) in Nykanen allow solicitation of a best match Network Service Broker or Web service component. Real-time business relationships between a Service Provisioning Infrastructure (208) and the Network Service Brokers (212, 232, 238) are facilitated in Nykanen by the matchmaking function (416).

Rosu, also previously cited, discloses evaluating the performance of communication paths in a multi-service network, including interconnections of different single communication services such as wireless and wireline telephone systems and internet access systems. Data pertaining to a common performance parameter is acquired for each type of communication path, and a performance graph for each type of path is constructed from the data.

Newly cited Graupner discloses an overlay network of multiple nodes with an initiator node, connected via references. Location independent references in Graupner interconnect nodes

to form the overlay topology. Graupner uses position information in the overlay topology for message routing between applications, and for generating service identifiers.

Nowhere in the combination of Nykanen, Rosu and/or Graupner is there disclosed or suggested any method or system for providing network services in an enterprise network, wherein said enterprise network includes a plurality of forwarding domains, comprising:

obtaining at least one end to end network service parameter from an application program;

communicating said at least one end to end network service parameter to a plurality of network service modules, each of said network service modules associated with a respective one of said forwarding domains; and

establishing, by said network service modules, communication paths within each of said forwarding domains, said communication paths within each of said forwarding domains together providing an end to end communication path for a single virtual connection across all of said forwarding domains, such that said communication paths within said forwarding domains are each required to provide network performance for communications over said virtual connection reflecting said at least one end to end network service parameter within their respective forwarding domains. (emphasis added)

as in the present independent claim 1. Independent claims 13 and 25 include analogous features. In contrast to the above highlighted features of the independent claims, none of the cited references include any mention of even the desirability of establishing connections in multiple forwarding domains such that communications over a specific virtual circuit across those paths reflect a previously communicated end to end network service parameter. With reference first to Nykanen, *independent* operation of *individual* networks is shown in Fig. 2, in which a Service Provisioning Infrastructure 208 connects directly and *independently* to *each individual one* of the Network Service Brokers (212, 220 and 238). The Network Service Brokers shown in Fig. 2 of Nykanen each service *separate, un-connected* networks (Network A 216, Network B 222 and Network C 240). Similarly, Fig. 3 of Nykanen shows a number of Web

Service Components (314, 316, 318 and 320) that are *independently* connected to a Web Service Registry 312. Neither the Network Service Brokers of Fig. 2, nor the Web Service Components of Fig. 3 in Nykanen are described as establishing connections in multiple forwarding domains based on a previously communicated end to end network service parameter, such that communications of a multi-domain virtual circuit are required to reflect the previously communicated end to end network service parameter in each connection, as in the present independent claims. Similarly in Fig. 3, Web Service Component 1 318 of Nykanen is also shown *independently* and *individually* connected through Service Provisioning Infrastructure 308 to an Application 302.

The teachings of Rosu also do not disclose or suggest establishing connections in multiple forwarding domains based on a previously communicated end to end network service parameter, such that communications of a multi-domain virtual circuit are required to reflect the previously communicated end to end network service parameter in each connection. It should first be recognized that Rosu constructs performance graphs from performance data, and *does not establish communication paths*. See paragraph 20 of Rosu, which describes the performance graphs as follows:

. . . More specifically, the performance graph positioned at the intersection of a particular row and column of the matrix ***is constructed from performance data*** of a communication path which is formed by interconnecting the communication services associated with the particular row and column, respectively. Thus, performance graph 50a ***is constructed from data acquired from heterogeneous communication path 40*** shown in FIG. 1, connecting telephone 24 and PC 26. In like manner, ***performance graph 50b is constructed from data acquired from homogenous communication path 48***. . . (emphasis added)

The above shows how the performance graph of Rosu is a data construct, and does not consist of or establish any network connections. This is further confirmed by the Rosu Abstract, which states in significant part as follows:

Data pertaining to at least one common performance parameter is acquired for each type of communication path, and ***a performance graph for each type of path is constructed from the data respectively acquired therefor***. The performance graphs for respective communication paths are evaluated and compared with one another, ***to provide information useful for improving network performance***. (emphasis added)

Thus Rosu *acquires* performance data of different types of *previously established* networks in order to construct the performance graph. See also paragraph 10 of Rosu, which states that "at least one of the performance parameters comprises a representation of the number of connections *successfully completed* through a communication path, relative to the number of connections attempted." The teachings of Rosu do not describe establishing communication paths at all.

In response to Applicant's previously submitted response describing these differences between the present claims and the combination of Nykanen and Rosu, the Examiner has now additionally cited Graupner in the claim rejections based on 35 U.S.C. 103. However, a complete reading of Graupner reveals that it also differs fundamentally from the above highlighted features of the present independent claims. Specifically, Graupner discloses establishing an *overlay topology* based on references that are location independent, and generation of *service identifiers*. As a first point of distinction, the nodes that make up the overlay topology in Graupner *do not establish connections within the domains they are associated with*. See Fig. 1 of Graupner, specifically Node C in First Domain 30, and Domain 40. Nothing in Graupner indicates that the nodes of the overlay network 10 establish connections within their domains, e.g. domains 30 and 40 of Fig. 1. Accordingly, like the disclosures of

Nykanen and Rosu, the overlay network nodes described by Graupner do not provide any way of establishing connections in multiple forwarding domains based on a previously communicated end to end network service parameter, such that communications of a multidomain virtual circuit are required to reflect the previously communicated end to end network service parameter in each connection, as in the present independent claims. Additionally, the service identifiers of Graupner are described as being formed by “generating a local name for each individual cluster; concatenating the local name with a nodes own identification path; and passing the concatenated path on a descendent nodes” (see paragraph 11 of Graupner). Such manipulation of node names to form service identifiers also does not disclose or suggest the above highlighted features of the present independent claims.

For these reasons, Applicant respectfully urges that the combination of Nykanen, Rosu and Graupner does not disclose or suggest all the features of the present independent claims 1, 13 and 25. The combination of Nykanen, Rosu and Graupner accordingly does not establish a *prima facie* case of obviousness with regard to independent claims 1, 13 and 25 under 35 U.S.C. 103. As to the remaining dependent claims, they each depend from independent claims 1 and 13, and are respectfully believed to be patentable over the combination of Nykanen, Rosu and Graupner for at least the same reasons.

Reconsideration of all pending claims is respectfully requested.

In view of the arguments set forth herein, Applicant respectfully requests that the claim rejections be withdrawn. All claims are respectfully believed to be allowable, and the application is considered to be in condition for allowance. Favorable action is respectfully requested.

Applicant has made a diligent effort to place the application in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully

requested that the Examiner telephone Dave Dagg, Applicant's Attorney at 617-630-1131 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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Date

/David A. Dagg/
David A. Dagg, Reg. No. 37,809
Attorney/Agent for Applicant(s)
44 Chapin Road
Newton MA 02459
(617) 630-1131

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